

## REMARKS

Claims 36-43 were rejected under 35 U.S.C. § 112, second paragraph. The claims have been amended in a non-narrowing manner to address the items raised by the Examiner.

Claims 36-40 and 42 were rejected under 35 U.S.C. § 103 as being unpatentable over Gilbertson in view of Tomaro. This rejection is traversed for the following reasons.

Claim 36 recites an "air jet flow is no less than 18,000 linear feet per minute." The Examiner acknowledges that Gilbertson fails to teach this feature and relies on Tomaro for teaching a hair dryer having a motor speed of 19,000 rpm. Tomaro, however, fails to teach an airflow rate. The Examiner reasons that the specific airflow rate is "well within the parameters of routine experimentation." Applicants respectfully disagree.

First, the combination of Gilbertson and Tomaro fail to teach the claimed air jet flow of no less than 18,000 linear feet per minute feature. It is well settled that for an obvious rejection to be proper, the references relied upon must teach all the claimed elements. See MPEP 2143.03 (To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art.). Clearly, in this case, the prior art relied upon by the Examiner fails to teach the claimed elements. Thus, the rejection should be withdrawn.

Additionally, the Examiner's reliance on "routine experimentation" is similar to the "design choice" rejection that has been criticized by the Court of Appeals for the Federal Circuit. In the case of *In re Chu*, 36 USPQ2d 1089 (Fed. Cir. 1995) citing *In re Gal*, 25 USPQ2d 1076 (Fed. Cir. 1992), the Federal Circuit reversed a Board of Appeals rejection based on design choice and held that a "finding of 'obvious design choice' precluded where the claimed structure and the function it performs are different from the

prior art." In the present case, the air jet flow rate provides a hand dryer that provides rapid drying of the hands by blowing off loose water and disrupting a stagnation boundary layer. These functions are not provided in Gilbertson or Tomaro. Thus, the Examiner's reliance on the "routine experimentation" is misplaced in the present case.

Additionally, there is no motivation to utilize an air jet flow no less than 18,000 linear feet per minute in Gilbertson. Gilbertson teaches a dryer for use in dentistry to dry teeth. Clearly, the force of the air stream in Gilbertson should not be such that would cause discomfort to the patient. It is submitted that an air jet of 18,000 linear feet per minute would not be suitable for drying teeth as such a forceful jet may cause patient discomfort. Thus, there is no motivation to use such air jet velocities in Gilbertson.

Lastly, submitted herewith is a Declaration under 37 C.F.R. § 1.132 establishing that the hand drying industry has experienced a long felt need for a dryer that rapidly dries the hands. Such rapid drying is accomplished, as disclosed in Applicants' specification, by using an air stream having a high velocity to remove loose water and break up the stagnation boundary layer. This secondary indicia of non-obviousness weighs against a finding that claim 36 is unpatentable.

For the above reasons, claim 36 is patentable over Gilbertson in view of Tomaro.

With respect to claim 37, claim 37 recites where "said air outlet has a cross sectional dimension between 0.5 inches to 1.25 inches, and where said air outlet has a length 3 to 5 times as large as said air outlet cross sectional dimension." The combination of Gilbertson and Tomaro fail to teach these claimed dimensional relationships. It is well settled that for an obvious rejection to be proper, the references relied upon must teach all the claimed elements. See MPEP 2143.03 (To establish *prima*

*facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art.). Clearly, in this case, the prior art relied upon by the Examiner fails to teach the claimed elements. Thus, the rejection should be withdrawn.

Additionally, the Examiner's reliance on "routine experimentation" is similar to the "design choice" rejection that has been criticized by the Court of Appeals for the Federal Circuit. In the case of *In re Chu*, 36 USPQ2d 1089 (Fed. Cir. 1995) citing *In re Gal*, 25 USPQ2d 1076 (Fed. Cir. 1992), the Federal Circuit reversed a Board of Appeals rejection based on design choice and held that a "finding of 'obvious design choice' precluded where the claimed structure and the function it performs are different from the prior art." In the present case, the dimensions of the air outlet provide an air stream that limits entrainment of ambient air so as to impact the hands with both (i) sufficient force to remove loose water and disrupt the stagnation boundary layer and (ii) and sufficient heat for evaporative drying. These functions are not provided in Gilbertson or Tomaro. Thus, the Examiner's reliance on the "routine experimentation" is misplaced in the present case.

Lastly, submitted herewith is a Declaration under 37 C.F.R. § 1.132 establishing that the hand drying industry has experienced a long felt need for a dryer that rapidly dries the hands. Such rapid drying is accomplished, as disclosed in Applicants' specification, by using an air stream provided through an outlet having a specific size and length. These dimensions limit entrainment of ambient air and allow the airstream to remain warm upon reaching the user's hands. This secondary indicia of non-obviousness weighs against a finding that claim 37 is unpatentable.

For the above reasons, claim 37 is patentable over Gilbertson in view of Tomaro.

With respect to claims 38-40, these claims all recite:

where said air outlet has a cross sectional dimension between 0.5 inches to 1.25 inches, and where said air outlet has a length 3 to 5 times as large as said air outlet cross sectional dimension, and where said air jet flow is no less than 18,000 linear feet per minute, and where said air jet at said air outlet has a pressure force of about 25 inches of water pressure height at said outlet, and where said air jet is heated, and is at a temperature of approximately 130 deg. F at 4 inches from said air outlet.

The combination of Gilbertson and Tomaro fail to teach the claimed elements. It is well settled that for an obvious rejection to be proper, the references relied upon must teach all the claimed elements. See MPEP 2143.03 (To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art.). Clearly, in this case, the prior art relied upon by the Examiner fails to teach the claimed elements. Thus, the rejection should be withdrawn.

Additionally, the Examiner's reliance on "routine experimentation" is similar to the "design choice" rejection that has been criticized by the Court of Appeals for the Federal Circuit. In the case of *In re Chu*, 36 USPQ2d 1089 (Fed. Cir. 1995) citing *In re Gal*, 25 USPQ2d 1076 (Fed. Cir. 1992), the Federal Circuit reversed a Board of Appeals rejection based on design choice and held that a "finding of 'obvious design choice' precluded where the claimed structure and the function it performs are different from the prior art." In the present case, the design parameters provide for rapid drying of the hands by both (i) removing loose water and disrupting the stagnation boundary layer and (ii) and providing sufficient heat for evaporative drying. These functions are not provided in Gilbertson or Tomaro. Thus, the Examiner's reliance on the "routine experimentation" is misplaced in the present case.

Lastly, submitted herewith is a Declaration under 37 C.F.R. § 1.132 establishing that the hand drying industry has experienced a long felt need for a dryer that rapidly dries the hands. Such rapid drying is accomplished, as disclosed in Applicants' specification, by using specific design parameters, such as those recited in claims 38-40, to provide rapid drying of the hands. This secondary indicia of non-obviousness weighs against a finding that claims 38-40 are unpatentable.

For the above reasons, claims 38-40 are patentable over Gilbertson in view of Tomaro.

With respect to claim 42, this claim recites elements similar to those discussed above with reference to claims 38-40. Thus, claim 42 is patentable for at least the reasons advanced with respect to claims 38-40. Additionally, claim 42 recites "where said dryer is mounted on the wall, and said air jet is angled towards the wall so that said water blown off is blown away from the user." Both Gilbertson and Tomaro are directed to hand held dryers. Thus it is not clear how these dryers can be considered mounted on a wall or having an air jet angled towards the wall. The combination of references fails to teach the claimed elements.

The pending claims, and particularly claims 38-40 and 42 recite a number of design parameters. For the Examiner to consider this combination of multiple design parameters as merely "routine" experimentation is unfair to Applicants and contrary to the requirements of 35 U.S.C. § 103. The "obvious to try" basis for finding obviousness is criticized in MPEP 2145. As noted in that section, it is improper to consider obvious, varying all parameters or trying each of numerous possible choices until one possibly arrived at a successful result, where the prior art gave either no indication of which

parameters were critical or no direction as to which of many possible choices is likely to be successful. In the present case, Applicants devoted significant time and effort to develop the claimed dryer by evaluating many different parameters such as air outlet cross-section, air outlet length, air pressure and air temperature. This type of development is intended by the patent statute and the courts to be patentable.

In view of the foregoing amendments and remarks, Applicants submit that this application is in condition for allowance. Early notification to this effect is requested.

If there are any fees due in connection with this response, please charge such fees to deposit account 06-1130 maintained by Applicants' attorneys.

Respectfully submitted,

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## MARKED-UP VERSION OF AMENDMENTS IN THIS RESPONSE

## IN THE TITLE

~~MEANS-AND-APPARATUS FOR HAND DRYING~~

## IN THE CLAIMS

36. (~~Newly-Added~~Amended) An apparatus for drying hands, comprising:

a blower for generating an air jet,

~~where the blower is a two stage blower, and~~

where the blower is driven by an electric motor, and

a heater for increasing temperature of said air jet, and

an air outlet for outputting said air jet, where said air jet flow is no less than 18,000 linear feet per minute.

37. (Amended~~Newly-Added~~) An apparatus for drying hands, comprising:

a blower for generating an air jet,

~~where the blower is a two stage blower, and~~

where the blower is driven by an electric motor, and

a heater for increasing temperature of said air jet, and

an air outlet having a longitudinal axis, the air outlet outputting said air jet, and

where said air outlet is tubular with an open end for said air jet to exit along the longitudinal axis, and

~~where said air outlet is circular, and~~

where said air outlet has a cross sectional dimension diameter between 0.5 inches to 1.25 inches, and

where said air outlet has a length 3 to 5 times as large as said air outlet cross sectional dimensiondiameter.

38. (~~Amended~~Newly-Added) An apparatus for drying hands, comprising:

a blower for generating an air jet,

~~where the blower is a two stage blower, and~~

where the blower is driven by an electric motor, and

a heater for increasing the temperature of said air jet, and

an air outlet having a longitudinal axis, the air outlet outputting said air jet, and

where said air outlet is tubular with an open end for said air jet to exit along the longitudinal axis, and

~~where said air outlet is circular, and~~

where said air outlet has a cross sectional dimension diameter between 0.5 inches to 1.25 inches, and

where said air outlet has a length 3 to 5 times as large as said air outlet cross sectional dimensiondiameter, and

where said air jet flow is no less than 18,000 linear feet per minute, and

where said air jet at said air outlet has a pressure force of about 50 25 inches of water pressure height at said outlet, and ~~has 20 inches of water pressure height at a distance of 6 inches from said air outlet, and~~

where said air jet is heated, and is at a temperature of approximately ~~135~~-130 deg. F at 4 inches from said air outlet.

39. (~~Amended~~Newly-Added) An apparatus for drying hands, comprising:

a blower for generating an air jet,

~~where the blower is a two stage blower, and~~

where the blower is driven by an electric motor, and

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a heater for increasing temperature of said air jet, and

an air outlet having a longitudinal axis, the air outlet outputting said air jet, and

where said air outlet is tubular with an open end for said air jet to exit along the longitudinal axis, and

~~where said air outlet is circular, and~~

where said air outlet has a cross sectional dimension ~~diameter~~ between 0.5 inches to 1.25 inches, and

where said air outlet has a length 3 to 5 times as large as said air outlet cross sectional dimension ~~diameter~~, and

where said air jet flow is no less than 18,000 linear feet per minute, and

where said air jet at said air outlet has a pressure force of about ~~50~~ 25 inches of water pressure height at said outlet, ~~and has 20 inches of water pressure height at a distance of 6 inches from said air outlet, and~~

where said air jet is heated, and is at a temperature of approximately ~~135~~ 130 deg. F at 4 inches from said air outlet, and

whereby said air jet blows off ~~at least 75%~~ a portion of the water from said hands in less than 3 seconds, and

whereby said air jet breaks up a stagnation boundary layer on said hands and aids in evaporation of remaining water, ~~and~~

~~whereby said hands are dried in less than 15 seconds, and~~

~~whereby when dried, said hands have less than 0.3 grams of water remaining on said hands, and~~

~~whereby immediately after drying, said hands do not cool due to evaporation of remaining water.~~

40. (~~Amended~~ Newly Added) An apparatus for drying hands, comprising:

a blower for generating an air jet,

~~where the blower is a two stage blower, and~~

where the blower is driven by an electric motor, and

where said motor is a brush type motor with a thermistor resistor in series with the brushes to limit the starting current in order to extend said brush life, and

a heater for increasing temperature of said air jet, and

an air outlet having a longitudinal axis, the air outlet outputting said air jet, and,

where said outlet is tubular with an open end for said air jet to exit along the longitudinal axis, and

~~where said air outlet is circular, and~~

where said air outlet has a cross sectional dimension diameter between 0.5 inches to 1.25 inches, and

where said air outlet has a length 3 to 5 times as large as said air outlet cross sectional dimension, and

where said air jet flow is no less than 18,000 linear feet per minute, and

where said air jet at said air outlet has a pressure force of about ~~50~~ 25 inches of water pressure height at said outlet, and ~~has 20 inches of water pressure height at a distance of 6 inches from said air outlet, and~~

where said air jet is heated, and is at a temperature of approximately ~~135-130~~ deg. F at 4 inches from said air outlet, and

whereby said air jet blows off ~~at least 75%~~ a portion of the water from said hands in less than 3 seconds, and

whereby said air jet breaks up a stagnation boundary layer on said hands and aids in evaporation of remaining water, and

~~whereby said hands are dried in less than 15 seconds, and~~

~~whereby when dried, said hands have less than 0.3 grams of water remaining on said hands, and~~

~~whereby immediately after drying, said hands do not cool due to evaporation of remaining water.~~

41. (~~Amended~~ Newly Added) An apparatus for drying hands, comprising:

a blower for generating an air jet,

~~where the blower is a two stage blower, and~~

where the blower is driven by an electric motor, and

a heater for increasing temperature of said air jet, and

an air outlet having a longitudinal axis, the air outlet outputting said air jet, and,

where said outlet is tubular with an open end for said air jet to exit along the longitudinal axis, and

~~where said air outlet is circular, and~~

where said air outlet has a cross sectional dimension diameter between 0.5 inches to 1.25 inches, and

where said air outlet has a length 3 to 5 times as large as said air outlet cross sectional dimension diameter, and

where said air jet flow is no less than 18,000 linear feet per minute, and

where said air jet at said air outlet has a pressure force of about 50 25 inches of water pressure height at said outlet, ~~and has 20 inches of water pressure height at a distance of 6 inches from said air outlet, and~~

where said air jet is heated, and is at a temperature of approximately ~~135-130~~ deg. F at 4 inches from said air outlet, and

a sound absorbing portion including an array of sound absorbing projections, said projections having a height of about 0.25 inches and spaced apart by 1/3 of the height, and

whereby said air jet blows off ~~at least 75%~~ a portion of the water from said hands in less than 3 seconds, and

whereby said air jet breaks up a stagnation boundary layer on said hands and aids in evaporation of remaining water, ~~and~~

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~~whereby said hands are dried in less than 15 seconds, and~~

~~whereby when dried, said hands have less than 0.3 grams of water remaining on said hands, and~~

~~whereby immediately after drying, said hands do not cool due to evaporation of remaining water.~~

42. (~~Amended~~ Newly Added) An apparatus for drying hands, comprising:

a blower for generating an air jet,

~~where the blower is a two stage blower, and~~

where the blower is driven by an electric motor, and

a heater for increasing temperature of said air jet, and

an air outlet having a longitudinal axis, the air outlet outputting said air jet, and,

where said outlet is tubular with an open end for said air jet to exit along the longitudinal axis, and

~~where said air outlet is circular, and~~

where said air outlet has a cross sectional dimension diameter between 0.5 inches to 1.25 inches, and

where said air outlet has a length 3 to 5 times as large as said air outlet cross sectional dimension diameter, and

where said air jet flow is no less than 18,000 linear feet per minute, and

where said air jet at said air outlet has a pressure force of about 50 25 inches of water pressure height at said outlet, ~~and has 20 inches of water pressure height at a distance of 6 inches from said air outlet, and~~

where said air jet is heated, and is at a temperature of approximately ~~135~~ 130 deg. F at 4 inches from said air outlet, and

where said dryer is mounted on the wall, and said air jet is angled towards the wall so that said water blown off is blown away from the user, and

whereby said air jet blows off ~~at least 75%~~ a portion of the water from said hands in less than 3 seconds, and

whereby said air jet breaks up a stagnation boundary layer on said hands and aids in evaporation of remaining water, and

~~whereby said hands are dried in less than 15 seconds, and~~

~~whereby when dried, said hands have less than 0.3 grams of water remaining on said hands, and~~

~~whereby immediately after drying, said hands do not cool due to evaporation of remaining water.~~

43. (~~Amended~~ Newly Added) An apparatus for drying hands, comprising:

a blower for generating an air jet,

~~where the blower is a two stage blower, and~~

where the blower is driven by an electric motor, and

where said motor is a brush type motor with a thermistor resistor in series with the brushes to limit the starting current in order to extend said brush life, and

a heater for increasing temperature of said air jet, and

an air outlet having a longitudinal axis, the air outlet outputting said air jet, and,

where said outlet is tubular with an open end for said air jet to exit along the longitudinal axis, and

~~where said air outlet is circular, and~~

where said air outlet has a cross sectional dimension diameter between 0.5 inches to 1.25 inches, and

where said air outlet has a length 3 to 5 times as large as said air outlet cross sectional dimension diameter, and

where said air jet flow is no less than 18,000 linear feet per minute, and

where said air jet at said air outlet has a pressure force of about 50 25 inches of water pressure height at said outlet, ~~and has 20 inches of water pressure height at a distance of 6 inches from said air outlet, and~~

where said air jet is heated, and is at a temperature of approximately ~~135~~ 130 deg. F at 4 inches from said air outlet, and

where said dryer is mounted on the wall, and said air jet is angled towards the wall so that said water blown off is blown away from the user, and

a sound absorbing portion including an array of sound absorbing projections, said projections having a height of about 0.25 inches and spaced apart by 1/3 of the height,

whereby said air jet blows off ~~at least 75%~~ a portion of the water from said hands in less than 3 seconds, and

whereby said air jet breaks up a stagnation boundary layer on said hands and aids in evaporation the remaining water, and

~~whereby said hands are dried in less than 15 seconds, and~~

~~whereby when dried, said hands have less than 0.3 grams of water remaining on said hands, and~~

~~whereby immediately after drying, said hands do not cool due to evaporation of remaining water.~~